UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
MIDLAND-ODESSA DIVISION

RESONANT SYSTEMS, INC. d/b/a RevelHMI, *Plaintiff*, v. APPLE INC., *Defendant*.	Case No. 7:23-cv-00077-ADA JURY TRIAL DEMANDED

DEFENDANT APPLE INC.'S REPLY CLAIM CONSTRUCTION BRIEF

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I. Apple's "Control Component" Constructions Should Be Adopted

As Apple explained in its opening brief, each of the "control component" terms should be construed pursuant to § 112(f). Op. Br. at 5–22. "Component" is a classic nonce word, and neither the word "control" nor anything else in the claims provide structure sufficient to carry out the recited functions. In accordance with the bargain embodied in § 112(f), "control component" should thus be limited to the structures disclosed in the specifications, and equivalents thereof.

As also explained in Apple's opening brief, Resonant does not dispute most of Apple's proposed constructions. During the meet-and-confer process, the parties agreed to the construction of "control component" except as to five issues: (1) whether "control component" in the '767 patent is a § 112(f) term; (2) the algorithms associated with the "control component" terms; (3) whether a switch is structure for the '337 and '830 patents; (4) whether an algorithm is required for a microcontroller; and (5) whether an "oscillator circuit" can be corresponding structure. Despite its repeated complaints that Apple purportedly misconstrued its positions,[1] Resonant's response brief identifies no other disputes. Each of those disputes are addressed again below.

A. "Control Component" in the '767 Patent is a Means-Plus-Function Term.

The "control component" limitation recited in claim 1 of the '767 patent must be construed pursuant to § 112(f) because it "recites function without reciting sufficient structure for performing that function." *Mass. Inst. of Tech. v. Abacus Software*, 462 F.3d 1344, 1353 (Fed. Cir. 2006) (internal quotation marks omitted). Namely, claim 1's "control component" controls the "supply of power … to the driving component to cause the moveable component to linearly oscillate"—

[1] Apple vehemently disagrees with Resonant's characterizations of the meet and confer process. If anything, Resonant's shifting-sands approach to its disclosures, and its repeated failures to abide by court-set deadlines for disclosing constructions, led to uncertainty as to its actual positions. Resonant only disclosed the latest iteration of its constructions three days before Apple's opening brief was due. Ex. 6 (2024-03-18 Davis Email); Dkt. 75-4. Nonetheless, the back-and-forth between the parties is immaterial to the constructions and need not be addressed further here.

but does not recite sufficient structure that can actually perform that function. Resonant's argument (at 5–6) that § 112(f) should not apply because the claim recites *some* structural elements—a generic "processor," "control program," and a "switch"—is flawed because the claims lack the necessary details as to *how* these generic components perform the non-generic recited function. Op. Br. at 9–11.

Resonant appears to acknowledge that those bare recitations of generic structures are insufficient, so Resonant argues that the algorithm performed is recited in the claim body itself. *See, e.g.*, Resp. Br. at 6. But a patentee cannot avoid § 112(f) simply because the claim recites function. Rather, it is ***because*** the claim recites function that resorting to the specification for structure is necessary. Indeed, if Resonant were correct, all a patentee need do to avoid the application of § 112(f) is recite a "processor" in combination with functional language. This is not, and has never been, the law. As courts have explained, "one skilled in the art would understand 'processor' to mean a general purpose computer" such that it invokes § 112(f). *GoDaddy.com, LLC v. RPost Commc'ns Ltd.*, No. CV-14-00126-PHX-JAT, 2016 WL 212676, at *56 (D. Ariz. Jan. 19, 2016), *aff'd*, 685 F. App'x 992 (Fed. Cir. 2017).

For example, in *GoDaddy*, the district court construed a term reciting a "processor for associating the content data with dispatch record data which includes at least said time related indicia and an indicia relating to the destination of the dispatch, to generate authentication data which authenticate[s] the dispatch and the contents of the dispatch" pursuant to § 112(f) because "the claimed 'processor' and other claim language does not convey to a skilled artisan anything about the internal components, structure, or specific operation of the processor." *Id.* at *53, *56 (italics omitted). While the recitation of a general purpose computer (processor) may be sufficient structure to perform general-purpose computing tasks (such as "processing," "receiving," and

"storing"), *In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1316 (Fed. Cir. 2011), where, as here, a claim recites a processor that performs non-typical functions of a general purpose processor, it is necessary to look to the specification to find an algorithm—even where the claim itself recites the functions performed by the processor. *Velocity Pat. LLC v. Mercedes-Benz USA, LLC*, No. 13-CV-8413, 2016 WL 5234110, at *6 (N.D. Ill. Sept. 21, 2016) (finding the term "processor subsystem" to require a § 112(f) construction because the claim language recites functions that "require[] additional programming of the processor").

Here, the agreed "control component" functions are: (1) "controlling supply of power from the power supply to the driving component to cause the movable component to linearly oscillate;" (2) "controlling operation of the linear resonant vibration module;" (3) "receiving output signals from sensors within the linear resonant vibration module during operation of the linear resonant vibration module;" and (4) "adjusting one or more operational control outputs of the control component according to the received output signals from the sensors in order that subsequent operation of linear resonant vibration module produces desired outputs from the one or more sensors corresponding to one or more operational control parameters." Op. Br. Appx A at § II.B.

Just as in *GoDaddy* and *Velocity Pat.*, this is far from a generic computer operation that can be performed by a generic processor. Because the structure recited in the claim, including the claimed "processor," are not sufficiently definite structure to perform these functions, the claim must be construed pursuant to § 112(f).

B. Contrary to Law, Resonant's Proposed Algorithms Would Improperly Broaden the Claims and Leave Out Steps Required to Perform the Recited Functions.

The algorithms recited in the specification that are "clearly link[ed]" with the functions recited for each "control component" term are clearly laid out in flowcharts (i.e., in Figs 7A–C) and in the associated descriptions in the specification. *See Williamson v. Citrix Online, LLC*, 792

F.3d 1339, 1351 (Fed. Cir. 2015) (*en banc*); Op. Br. at 14–17. Apple proposes that the construction include the algorithms exactly as they are disclosed in the specification.

Resonant takes the opposite approach. Rather than embracing the disclosed algorithms, Resonant attempts to characterize them in self-serving ways—all in the name of purportedly coming up with a construction that "can be understood and applied by the jury." *E.g.*, Resp. Br. at 10. In reality, though, Resonant's constructions are contrary to law because they remove steps that are necessary for performing the recited functions, improperly broadening the scope of its claims beyond what is disclosed in the specification. Below, we first address Resonant's criticisms of Apple's algorithms and then explain why Resonant's proposals should be rejected.

1. Resonant's Criticisms of Apple's Constructions Are Unfounded.

First, Resonant argues (as to each patent, in various iterations) that Apple's constructions cannot be right because they would require that Resonant prove that the accused products contain ***every word*** in the figures and corresponding specification sections in order to show infringement. *See, e.g.*, Resp. Br. at 9. That is nonsense. As Apple even explained on its meet-and-confers with Resonant, no one is arguing that Resonant must prove (for example) that the variables in the accused products have exactly the same name as the variables recited in the specification, nor that every aspect of the description must be shown. Rather, what must be shown is that the accused product has the corresponding structures disclosed in the specification, including ***the algorithm*** disclosed in the specification (and equivalents thereof). Op. Br. at 12–20. That algorithm is described in the figures and specification of the asserted patents. Contrary to Resonant's straw-man attack, simply because the specification provides explanation and description does not mean that those descriptions of the steps themselves somehow become additional algorithmic steps.[2]

[2] Notably, in some instances, the specification provides alternatives for certain aspects of the

Resonant is also wrong to suggest (at 9–10) that *WMS Gaming* and its progeny compels its approach over Apple's. To the contrary, identifying the algorithm disclosed in the specification is often done by specifically pointing to the algorithm disclosed in the specification, even if that algorithm is disclosed in Figures or flow-charts. *See, e.g.*, *VocalTag Ltd. v. Agis Automatisering B.V.*, 659 F. App'x 616, 620 (Fed. Cir. 2016) (identifying algorithm by referencing figures); *see also, e.g.*, *Nokia Sols. & Networks US LLC v. Huawei Techs. Co., Ltd.*, No. 2:16-CV-0756-JRG-RSP, 2017 WL 2267315, at *8 (E.D. Tex. May 24, 2017) (construing corresponding structure by reference to specific columns and figures of the specification); *Acceleration Bay LLC v. Activision Blizzard, Inc.*, No. CV 16-453-RGA, 2018 WL 3382922, at *3 (D. Del. Apr. 10, 2018) (same). Indeed, despite its claim that Apple has taken a "fundamentally wrong approach to defining algorithms corresponding to claimed functions," Resonant acknowledges (at 10) that the Court can express an algorithm either by listing a set of steps ***or*** by referencing portions of the specification.

Second, there is no legitimate reason to believe that a jury will be confused by the disclosed algorithms, as Resonant argues (e.g., at 12–13). The patents' figures contain straightforward flowcharts, which actually serve to make the algorithm easier to understand than abstract text. In any event, the subject matter here is complicated regardless of how the algorithm is expressed—which is why both parties have (or will) employ experts to explain the technology to the jury and why this Court will provide instructions. In any event, a potential risk of jury confusion is no reason to broaden claims beyond the scope to which a patentee is entitled.

Third, Resonant argues that Apple's algorithms are over-inclusive—*i.e.*, they include steps that (in Resonant's view) are not necessary to perform the recited function. Despite this broad

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algorithm—something recognized in Apple's constructions but entirely ignored by Resonant and brushed over by its proposals.

assertion, Resonant identifies only ***a few steps*** that it contends are not required.

For the '767, '337, and '830 patents, Resonant argues that the "power down steps" (steps 718, 720, and 722 in Figure 7A) are not necessary to perform the recited functions. Resp. Br. at 7, 11, 17. The specifications of the asserted patents prove Resonant wrong. For one, the specification of the '767 patent (for example)[3] explains that the ***entirety*** of the algorithm shown in Figs. 7A–C (including the "power down steps") is "the control program, executed by the CPU, ***that controls operation of an LRVM***…." '767 patent, 6:15–17. In other words, the specification itself declares the entirety of the algorithm necessary to perform the agreed-upon function (to "control[] operation of the linear resonant vibration module"). *See, e.g.*, Op. Br., Appx A at 3.[4]

Any algorithm for controlling a vibration module must include the ability to turn the vibration on ***and*** turn the vibration off. Indeed, without the algorithm having the ability to turn vibration off, the vibration would just continue forever. That is why the algorithm actually disclosed in the asserted patents includes both (1) turning the vibration on (i.e., at step 702, *see, e.g.*, '767 patent, 6:19–2), at which point the "various local variables [including those relating to strength and frequency] are set to default values," and (2) turning the vibration off, should an appropriate input be received, at which point the control program terminates. *See, e.g.*, *id.*, 6:62–7:1. You cannot have the "on" without the "off"; indeed, there is no other way described in the specification to re-initialize the stored values corresponding to strength and frequency other than turning the vibration module off and then back on again. Further, absent the ability to turn the vibration on and off, there would be no way to accept a user input requesting that vibration turn

[3] This same description appears in the '337 patent and the '830 patent.

[4] Contrary to its re-telling, Resonant ***did not*** identify these steps as not being necessary on any meet and confer; but rather asked for Apple's position as to why they were included. Nonetheless, Resonant's failure to previously identify these steps is immaterial to the proper construction.

off, corresponding with the need to oscillate in a manner prescribed by the user. *See, e.g.*, Op. Br., Appx A at § II.B. (Agreed Functions). Moreover, the entire control loop cannot be completed without checking to see if there has been a "power down" event, meaning that disclosed algorithm simply does not work without the "power down" steps. *See, e.g.*, '767 patent, Fig. 7A, 6:32–7:1. In other words, Resonant's constructions break the algorithm disclosed in its patents.

Resonant also confusingly appears to argue (at 11–12), in a single sentence, that the "monitor" routine is not required for more complex vibration modes. Why? Resonant's brief does not exactly say. The "non-default" modes of operation are part of the "monitor" algorithm—so there is no reason why the "monitor" algorithm should be excluded. Moreover, to determine whether the device is operating as the user intended, the "monitor" routine must be used as it is the algorithm that determines how the vibration is stepped up (and monitored) to achieve the ideal resonance frequency. *See* '337 patent, 7:32–8:9; *see also id.* at 13:42–50 ("In a linear-resonant vibration module, ***discussed above***, by maintaining device operation at a resonant frequency …" (emphasis added)); *id.* at Abstract ("Feedback control is used …"); *id.* at 3:12–15 (similar).

Finally, Resonant repeatedly criticizes Apple's opening brief for not adequately responding to Resonant's shifting sands approach to claim construction. What Resonant ignores, though, is that (contrary to this Court's scheduling order), Resonant provided those constructions ***only three days*** before the due date for Apple's opening claim construction brief. Ex. 6; Dkt. 75-4. This last-minute disclosure was the ***first time*** Resonant had disclosed ***any*** construction in writing for the '882 patent's "control component" term. That Apple did not have sufficient notice of Resonant's latest view on claim construction lies solely at the feet of Resonant.

2. Resonant's Proposed Algorithms Are Wrong.

Each of Resonant's proposed algorithms is a transparent attempt to escape the teachings of the asserted patents and improperly broaden the claims that should be rejected.

For the '767 patent, Resonant proposes (at 6–10) an "algorithm" consisting only of three steps: (a) receive the value of an output signal; (b) compare that value to a different value, which could be a previous value; and (c) adjust one or more operational control outputs based on that comparison. Resonant's algorithm is far too underinclusive. As an example—though Resonant admits (at 8) that step (b) is done "by using feedback," Resonant ***fails to include*** any portion of the algorithm disclosed in the specification on using feedback. Namely, as the '767 specification explains, Figure 7B illustrates a feedback "monitor" algorithm, which gradually steps up the frequency, checking at every step, until the resonance frequency is achieved. *See, e.g.*, '767 patent, 7:3–49. Resonant also fails to include any portion of the algorithm shown in Figure 7C—called the "routine 'control,'" *id.* at 7:50–51, which is the part of the control program where an output to a power supply is actually computed and sent. *Id.* at 7:50–62, Fig. 7C. Calculating and actually providing an output to a power supply are undoubtedly necessary steps to perform a function of "controlling supply of power from the power supply to the driving component …" as is an agreed function for the '767 patent; yet Resonant would leave these steps out entirely.

For the '337 patent, Resonant proposes (at 10–13) an "algorithm" consisting only of three steps: (a) set the mode and strength to values representing selections made by user input to the user input features; (b) provide a corresponding output to the power supply so that the power supply provides a corresponding output to the driving component; and (c) drive simultaneous oscillation of the moveable component at two or more frequencies. Again, Resonant's algorithm is under-inclusive. For example, though Resonant includes setting the "mode and strength" to selections made by the user, it again fails to include the portion of the algorithm disclosed in the specification that actually accomplishes this (i.e., the "monitor" routine). Also, while Resonant ***does*** include this time a step of providing an output to the power supply, it leaves out the algorithm for

performing that function (i.e., the "control" routine), reducing that entire routine to a conclusory single step. As for the last step, all Resonant's algorithm does is repeat the functional language of the claim—hardly an algorithm. Indeed, allowing the "algorithm" to be only the recited function would, in essence, authorize functional claiming, which is against all Federal Circuit precedent on the issue. The actual algorithm—i.e., the "how"—for achieving that function is recited in column 13, none of which Resonant includes. *See, e.g.*, '337 patent, 13:3–41.

For the '830 patent, Resonant proposes (at 15–17) essentially the same algorithm as for the '337 patent—except that for claims 1 and 19, Resonant argues that not even the third step is required. That algorithm is erroneously underinclusive for the same reasons as for the '337 patent.

And for the '882 patent, Resonant proposes (at 19–21) a three-step algorithm: (a) receive a target frequency; and (b) receive sensor outputs indicating (1) position of the mass ***or*** (2) position and velocity of the mass; and (c) generate control outputs based on the target frequency and the current position and velocity of the mass. Once again, this algorithm leaves out important steps in the specification. For example, Fig. 45 shows initiating oscillation and initiating sensor output—which are required to perform any of the other steps and necessary to receiving outputs from those sensors and controlling oscillation. Resonant's "algorithm" omits them entirely. Resonant also leaves out the looping nature of the algorithm shown in Figure 45. As described in the specification, steps 4518–21 constitute a "while loop" that "continuously receives position ***and*** velocity data from the sensor and executes immediate control based on that position and velocity." '882 patent, 31:34–38 (emphasis added). Despite that this constant and continuous monitoring and adjustment is the only mechanism disclosed for "controlling oscillation of the mass to produce a vibration response according to the received control signals," Resonant fails to include it, calling it extraneous. Finally, Resonant's algorithm allows for either monitoring position alone ***or***

monitoring position and velocity. No such algorithm is disclosed. Instead, the specification discloses only one that monitors both position ***and*** velocity. *See, e.g.*, *id*. at 31:37–38.

C. Switches Are Required Structure.

The switches described in the specification are the ***only*** structure described in the specification for controlling the supply of power from a power supply to the coil. *See* Op. Br. at 20–21.[5] Resonant argues (at 13–14, 17) that a switch is not corresponding structure because controlling the supply of power ***can*** be performed by control logic instead of a switch. This misses the boat entirely. Whether something ***can*** be done is immaterial. The only relevant question with respect to § 112(f) is ***what is disclosed in the specification as performing the agreed upon function***. Resonant points to no disclosure in the patents where "computer control logic" is used instead of a switch, nor any source besides an extrinsic opinion from its expert as to whether this would be possible. Regardless, pursuant to § 112(f), Resonant gets only the structure disclosed in the specification and equivalents, not just any theoretical structure an expert can dream up for performing the recited function.

D. "Microcontroller" is No Different Than "Microprocessor"

Contrary to Resonant's arguments, a "microcontroller" should be treated no different than a "microprocessor"—both require algorithms. Plainly, Resonant's expert disagrees with Apple's expert, who testified that even a microcontroller requires some kind of control algorithm. *Compare* Dkt. 75-6 (Visell Dec.) at ¶¶ 82–87 *with* Dkt. 80-1 (Goossen Dec.) at ¶¶ 37, 43, 48. Nonetheless, this dispute can be resolved by simply referring to the intrinsic evidence: the specifications treat a "microcontroller" as interchangeable with a "microprocessor." *See, e.g.*, '337 patent, 10:53–54 ("including a processor or microcontroller within a …"); 11:43–45 ("…replacing

[5] For the avoidance of doubt, Apple proposes only that ***one of*** the switches shown in Figures 5A–6 and described at 5:45–65 and 6:2–8 is required.

the processor ***or*** microcontroller" (emphasis added)). As the patents do not treat a microcontroller as any different from a microprocessor, this Court should not either.

E. "Oscillator Circuit" Cannot Be Corresponding Structure for the '830 Patent.

Lastly, an "oscillator circuit" cannot be corresponding structure for the '830 patent's control component term. As explained in Apple's opening brief, the "control component" in the '830 patent requires storing values associated with frequency and vibration. Indeed, the only disclosure of "stored values" in the specification is associated with a microprocessor or similar structure. This, of course makes sense: a CPU is digital and can easily read data. An "oscillator circuit," though, is analog—i.e., it has nowhere to "store" values. Accordingly, because the "oscillator circuit" is not described as performing the recited function, and is unable to do so, it cannot be the corresponding structure. *See Display Techs., LLC v. Mechtronics Corp.*, 335 F. Supp. 2d 431, 438 (S.D.N.Y. 2004). Resonant offers no substantive response.

II. The Preamble of Each Asserted Claim Is Limiting

Resonant does not dispute that nearly every preamble in the asserted independent claims is limiting, including "A linear vibration module" in claim 1 of the '337 patent (a claim Resonant later dropped) and "A vibration module" in claim 20 of the '830 patent. Nonetheless, Resonant argues that the ***same*** preambles in claim 2 of the '337 patent and claim 20 of the '830 patent are not limiting because they do not provide antecedent basis for a limitation in the body of the claim. *See* Resp. Br. at 21–22.[6] This is wrong. Op. Br. at 24; *Impax Lab'ys, Inc. v. Lannett Holdings, Inc.*, No. 14-984-RGA, 2015 WL 7737309, at *3 (D. Del. Dec. 1, 2015) (finding preamble to be limiting even though it "plainly does not provide antecedent basis for terms in the claim bodies").

[6] Resonant asserts its "position is not that a preamble can be deemed limiting only if it provides such antecedent basis," but provides no other reason for carving out these two preambles as non-limiting while admitting that all other preambles are. Resp. Br. at 21–22.

Resonant does not address Apple's case law and instead relies on inapplicable cases. Resp. Br. at 21. In *Acceleration Bay, LLC v. Activision Blizzard Inc.*, the Federal Circuit found preamble language "for providing a game environment" and "for providing an information delivery service" not limiting because they recited the intended purpose for the claimed "computer network." 908 F.3d 765, 769–70 (Fed. Cir. 2018). Similarly, in *Arctic Cat Inc. v. GEP Power Prod., Inc.*, the preamble "for a personal recreational vehicle" was held to be a non-limiting statement of intended use for the claimed "power distribution module." 919 F.3d 1320, 1323, 1328–30 (Fed. Cir. 2019). Here, in contrast, the preambles do not recite an intended purpose (e.g., they do not recite "a linear vibration module *for a sex toy*"). Instead, they define the scope of the claims and distinguish them from prior art, making them limiting. Indeed, the specifications expressly distinguish the claimed "[linear] vibration module" from a prior art "unbalanced electric motor." '337 patent, 1:23–3:3; '830 patent, 1:25–3:7. And each patent is replete with descriptions of "[linear] vibration modules" as the "invention." Op. Br. at 22–24. Thus, each preamble recites "essential structure" and "is 'necessary to give life, meaning, and vitality' to the claim." *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (internal citation removed).

III. Indefiniteness

A. The Court Should Not Rewrite Resonant's Claims.

Resonant does not dispute that the terms Apple identified as indefinite in claim 4 of the '830 patent and in claim 17 of the '882 patent lack proper antecedent basis.[7] Resonant instead

[7] In a footnote, Resonant argues a claim term does not need an antecedent basis if the claim's scope is nevertheless "readily understood," but Resonant fails to explain how or why that is the case here. Resp. Br. at 24 n.10 (citing *Microprocessor Enhancement*). As Dr. Visell explained, the indefiniteness here render the claims "impossible to understand" to a skilled artisan. Dkt. 75-6 (Visell Dec.) at ¶ 114. Resonant's bare citation to *Microprocessor Enhancement* is misplaced.

asks the Court to rewrite them.[8] Dkt. 80-1 (Goossen Dec.) at ¶¶ 50, 57; Resp. Br. at §§ III.C–D. But the Court cannot rewrite claims where, as here, there is a reasonable debate about the intended claim scope and "the district court [is] required to guess as to what was intended." *Novo Industries, L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1357–58 (Fed. Cir. 2003); Op. Br. at 28–30.

Resonant argues that changing "claim 1" to "claim 3" is "easier" than removing four instances of "the" because fewer words would be changed. Resp. Br. at 22–23. This argument is irrelevant. *See Parthenon Unified Memory Architecture LLC v. Apple Inc.*, No. 215CV00621JRGRSP, 2016 WL 3365945, *13–14 (E.D. Tex. 2016) (refusing to judicially correct a claim where the patentee proposed a ***one***-word edit but there was another reasonable correction when rearranging ***four*** words); *Bella Summit LLC v. Gamebreaker, Inc.*, No. 221CV06007JAKMAR, 2022 WL 17882138, *7–8 (C.D. Cal. 2022) (similar). Apple's proposal is not less plausible than Resonant's proposal merely because the former requires more keystrokes.

Likewise, claim 17 of the '882 patent cannot be rewritten. Instead of referring to "claim 1," the applicants may have intended to reference any of claims 10–16. Op. Br. at 30. Resonant cites a file history statement that application claim 21 (issued as claim 17) "depend[s] from [issued] independent claim 10." Resp. Br. at 25–26. But Resonant unjustifiably assumes there is a typo in claim 17 and not in the prosecution history. Claim 17 consistently depended from issued claim 1 during prosecution. Ex. 7 ('882 FH Excerpt). Thus, it is equally likely the file history contains a typo. More importantly, claims 11–16 each depend from claim 10 (either directly or indirectly).

[8] Despite the allegedly "clear typographical error[s]" Resonant does not seek a certificate of correction with the PTO; "[t]he proper method of addressing this alleged error." *Arlington Indus., Inc. v. Bridgeport Fittings, Inc.*, 345 F.3d 1318, 1331 n.1 (Fed. Cir. 2003). "[R]efusal to seek correction from the PTO, despite knowing that it would be proper to do so, further suggests that the error in the [claims] is not evident on its face," and not subject to judicial correction. *Canatex Completion Sols., Inc. v. Wellmatics, LLC*, No. 4:22-CV-03306, 2023 WL 9645474, at *3 (S.D. Tex. Dec. 14, 2023).

Thus, "claim 1" could be replaced with any of claims 11–16 and ***still*** depend from claim 10.

And even if Resonant's proposed construction is adopted, claims 17, 19, and 20 are still indefinite because if claim 17 depends from claim 10, and therefore includes all the limitations of claim 10, then claim 17 recites "a controller" twice. Op. Br. at 30; '882 Patent, claims 10, 17. Thus, "the controller" in claims 17, 19, and 20 are indefinite because it is unclear which controller is referenced. Resonant provides no substantive response to this fatal flaw.[9]

B. Claims 1 and 10 of the '882 Patent Are Indefinite Because "The Mass" Lacks Antecedent Basis.

Claims 1 and 10 of the '882 patent each recites "a mass" two times, leaving it unclear which of the two recited masses the terms "the mass" refers back to. Op. Br. at 26–27; Dkt. 75-6 (Visell Dec.) at ¶ 115. Resonant argues that the first recitation of "a mass" is "describe[s] the oscillation path," whereas the second recitation of "a mass" is "a structural limitation." Resp. Br. at 27. But the plain language recites "a mass" twice, presumably claiming a system with two moving masses. Op. Br. at 26–27. Indeed, the specification recites a system with multiple "masses." '882 patent, 11:15–19, Fig. 12. Accordingly, claims 1 and 10 are indefinite, as a skilled artisan would not be able to determine which mass "the mass" refers to. Dkt. 75-6 (Visell Dec.) at ¶ 115.

C. Claim 1 of the '767 Patent and Claim 4 of the '830 Patent are Indefinite Because "The One Or More Sensors" Lacks Antecedent Basis.

Claim 1 of the '767 patent and claim 4 of the '830 patent are indefinite because each recites "the one or more sensors"—which includes having ***one*** sensor—and it is unclear which of the previously recited "sensors" it refers to. Op. Br. at 26–27. Resonant relies entirely on expert testimony that "[t]he 'one or more' preceding 'sensors' accounts for the fact that adjustment may

[9] Resonant argues: "Apple has not preserved an indefiniteness challenge to claim 10." Resp. Br. at 26 n.11. But Apple did not argue that "the controller" in claim 10 is indefinite; only that "the controller" in claim 17 is indefinite under Resonant's proposed construction.

only be needed to address one of the sensors at a given time." Dkt. 80-1 (Goossen Dec.) at ¶ 66. But this does not resolve the indefiniteness. Even if he was correct, it remains unclear which of the "sensor**s**" is referenced when an adjustment is purportedly needed to address only one sensor.

D. Claims 10, 17, 19, and 20 of the '882 Patent Are Indefinite Because "The One Or More Oscillating Resonant Module[S]" Lacks Antecedent Basis.

Claims 10, 17, 19, and 20 of the '882 patent each recites "the one or more oscillating resonant module[s]," which includes having just ***one*** oscillating resonant module. As explained in Apple's opening brief, the lack of antecedent basis for these terms renders them indefinite. Op. Br. at 26. Resonant does not address this issue. *See* Resp. Br. at 28–29.

E. Claim 1 of the '767 Patent and Claim 4 of the '830 Patent Are Indefinite Because "Desired Outputs" Lacks Objective Boundaries.

The '767 and '830 patents provide no guidance by which to determine the scope of the subjective term of degree "desired outputs," rendering the claims reciting it indefinite. Op. Br. at 28. Resonant does not dispute that "desired outputs" is a term of degree or that such terms are indefinite when "clear guidance about the bounds of a term of degree are lacking in the intrinsic evidence." *Geoscope Techs. Pte. Ltd v. Google LLC*, No. 122CV01331MSNJFA, 2023 WL 4627433, at *11 (E.D. Va. July 19, 2023) (citing cases). Resonant argues only that "desired" is not subjective and cites portions of the specifications. However, each portion refers to ***vibrations*** of "desired amplitude and frequency." There is no disclosure of a "desired output" from a sensor.

Resonant's reliance on *RevoLaze LLC v. J.C. Penney Co., Inc.* is misplaced. No. 2:19-CV-00043-JRG, 2020 WL 697891, at *10 (E.D. Tex. Feb. 11, 2020). There, the patent provided objective criteria for determining the scope of a "desired pattern" by disclosing numerous examples of design patterns and reciting instructions to create the "desired pattern." *Id*. at *2, *10. In contrast, the '767 patent provides no examples of "desired outputs" and, at least under Resonant's construction, the claims recite no instructions for producing them.

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CERTIFICATE OF SERVICE

Pursuant to the Federal Rules of Civil Procedure and Local Rule CV-5, I hereby certify that, on April 25, 2024, all counsel of record who have appeared in this case are being served with a copy of the foregoing via the Court's CM/ECF system:

/s/ Roger A. Denning
Roger A. Denning